

ZOTOV, Konstantin Gavrilovich, inzh.; KIRILOV, Mikhail Mikhaylovich,
kand. tekhn. nauk; KVITKOVSKIY, V.I., inzh., retsenzent;
NOVIKAS, M.N., inzh., red.; USENKO, L.A., tekhn. red.

[Signaling and telecommunication devices and their use]
Ustroistva STsB i sviazi i ikh ispol'zovanie. Izd.2., perer.
i dop. Moskva, Transzheldorizdat, 1962. 283 p.
(MIRA 15:9)

(Railroads--Signaling)
(Railroads--Communication systems)
(Railroads--Electric equipment)

ACC NR: AP600C349

ACC NR: AP6000349
AUTHORS: Sedov, L. N.; Li, P. Z.; Zotov, L. I.; Akulkin, M. S.; Nargin, V. A.
Krupkina, F. A. 4455

ORG: none

SOURCE: Brulleten' izobrateniy i tovarnykh znakov, no. 21, 1965, 41

SOURCE: *Byulleten' nauchno-tekhnicheskikh issledovaniy po radiofizike i radiokhimii*
TOPIC TAGS: polymer, polymerization, polyester, polycondensation

TOPIC TAGS: polymer, polymerization, polyester, . . .

ABSTRACT: This Author Certificate presents a method for obtaining elastic copolymers of unsaturated polyester resins with different monomers. To overcome shrinkage and the exothermic effect during hardening, the polyesters used are those obtained by condensation of unsaturated acids or their anhydrides with polyalkyleneglycols (e.g. with polytetramethyleneglycol) with molecular weight from 1000 to 10 000.

SUB CODE: 11/ SUBM DATE: 06 May 62

H(w)

Card 1/1

ZOTOV, L.N., inzh.-mekhanik (stantsiya Ramenskoye, Moskovskoy dorogi)

Self-propelling mobile electric power plant. Put' 1 put.khoz.5
no.2:26-27 F '61. (MIRA 14:3)
(Railroads--Electric equipment)

9,2100 (1385, 1153, 1159)
9,2200 (1001, 1482)

35454

S/103/62/023/003/009/016
D201/D301

AUTHORS: Zotov, L.V., and Popov, V.S. (Kiyev, Leningrad)
TITLE: Heated metal resistor multipliers and dividers
PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 3, 1962,
365 - 370 .

TEXT: The authors give the theory of voltage multipliers and dividers designed around metal resistors, consider the bridge method of multiplication and division, and analyze its errors. The bridge method is based on the fact that when a metal wire R is inserted in one of the bridge arms and heated by applying a voltage U_1 of one frequency, while the bridge supply voltage U_2 has a different frequency, then the detector voltage U_D is proportional to the product U_1 and U_2 , providing U_1 lies within the linear part of the voltampere characteristic of the heated resistance, and voltage U_2 or supply current I_2 are small enough not to heat the resistance. The absolute multiplication error γ appears when U_1 deviates from its no-

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S/103/62/023/003/009/016
D201/D301

Heated metal resistor multipliers ...

Final value U_{10} as a result of the destruction of proportionality between the function $F(U_1)$ and the argument U_1 . The bridge has been experimentally tried for a platinum wire 24 microns in diameter and 20 mm long. The bridge supply current I_2 was 7.5 mA. The nominal voltage U_{10} was taken as 2000 mV. The results obtained show a proportionality between U_D and U_1 accurate to within 0.5 % for voltage changes from 1 - 2 V. The temperature error of the multiplying arrangement is less than 0.2 % for $\pm 100^\circ\text{C}$ temperature changes. Types A and B heated resistances were investigated. Type A consists of a heater, a platinum wire 50 microns in diameter, placed in a thin molybdenum glass tube, with a heating element wound around it. In type A the sensing element may be used as a heater and vice versa. The time constant of the heated element is 0.6 sec. Type B is a copper wire with glass insulation, with a 5 micron wire wound on. The A wire diameter is 3 microns, with glass insulation 12 microns. Its time constant is 0.17 sec. Both types produced approximately the same results, with $U_D = f(U_1) = 0.1 U_1$ deviating not more than 0.6% of its nominal value. The change of frequency of U_1 from 20 to 200 kc/s had no effect. In the divider arrangement the voltage U_2 to be

Card 2/3

S/103/62/023/003/009/016
D201/D301

Heated metal resistor multipliers ...

divided is applied to the bridge which is connected in series to a high gain amplifier. One of the arms has a metal resistance, heated by voltage U_3 , which is the divisor. The arms of the bridge are adjusted in such a manner that the detector arm voltage is proportional to the product of U_3 and U_D . It is stated in conclusion that the above arrangements may be applied not only in automation but also in the measurement techniques of a.c. current and as logarithmic meters. There are 2 tables, 3 figures and 2 Soviet-bloc references.

SUBMITTED: July 10, 1961

X

Card 3/3

ZOTOV, M.

Credit

Ways to strengthen industrial credit work, Den. i kred, 11, No. 2, 1952.

Monthly List of Russian Accassions, Library of Congress, May 1952, Unclassified.

ZOTOV, M.

Increase control over wage fund disbursement. Den. 12 red.
20 no. 2:15-22 F '62. (MIRA 15:2)

(Wages)
(Banks and banking)

ZOTOV, M.

Utilize hidden potentialities more fully. Dem. 1 kred. 20
(MIRA 15:9)
no.9:3-12 S '62.

1. Upravlyayushchiy Rossiyskoy respublikanskoy khtoroy Gosbanka.
(Banks and banking) (Industrial management)

ZOTOV, M.

Improve the standard of economic work. Den. i kred. 18 no. 9:9-17
(MIREA 13:8)
S 160. (Russia--Industries)
(Credit)

ZOTOV, M.

Source of creative activity. Den. i kred. 21 no.923-11 S '63.
(MIRA 16:10)

ZOTOV, M.

Improve bank control through the ruble. Den. i Mred. 21
no. 483-11 Ap '63. (MIRA 16:4)
(Finance)

MIKOYAN, A.; IGNATOV, N.; KOROVUSHKIN, A.; GARBUZOV, V.; KABKOV, Ya.;
KUDRYAVTSEV, A.; BORYCHEV, I.; VOROB'YEV, V.; SVISENKOVS, M.;
USHAKOV, V.; MIROSHNICHENKO, B.; ZENCHENKO, N.; BABUSHKIN, V.;
NIKITKIN, N.; PODSHIVALENKO, P.; ZOTOV, M.; VOSKRESENSKIY, A.;
KAZANTSEV, A.; KORDYUKOV, A.; NOSKO, P.; PLESHAKOV, S.; VERSOV, A.;
ROMASHOV, A.

I.N. Kazakov; obituary. Den. i kred. 19 no.3:95 Mr '61.
(MIRA 14:3)
(Kazakov, Ivan Nikolaevich, 1907-1961)

ZOTOV, M.

Aid further trade development with credit. Den. i kred. 19
no.7:14-20 J1 '61. (MIRA 14:7)
(Retail trade) (Credit)

ZOTOV, M.

Raise the level of economic work in State Bank institutions.
Den. i kred. 17 no.11:3-13 N '59. (MIRA 12:12)
(Banks and banking)

ZOTOV, M. "APPROVED FOR RELEASE: Thursday, September 26, 2002
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CIA-RDP86-00513R002065510004-8
CIA-RDP86-00513R002065510004-8"

Banks and Banking

Ways to strengthen industrial credit work, Den. i kred, 11, No. 2 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952, Unclassified.

ZOTOV, M.

Strengthen ties between the State Bank and regional economic councils.
Den. i kred. 16 n.1:10-17 Ja '58. (MIRIA 11:3)
(Russia--Industries) (Banks and banking)

GRIBKOV, F.; ZOTOV, M.

Better organization of housing finances. Fin,SSSR 18 no.7:37-39
(Jl '57.)

1. Zamestitel' nachal'nika ot dela finansirovaniya kommunal'nogo i zhilishchnogo khozyaystva Lengorfinotdela (for Gribkov).
2. Starshiy konsul'tant ot dela finansirovaniya kommunal'nogo i zhilishchnogo khozyaystva Lengorfinotdela (for Zотов).
(Housing management)

ZOTOV, M.

Raising the role of credit in the development of the national
economy. Den. i kred. 19 no. 9:24-31 S '61. (MIRA 14:9)
(Credit)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510004-8
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510004-8"
GAPONENKO, Yu.A.; ZOTOV, M.D., naladchik mashiny

Electric timer. Put' i put.khoz. 9 no.4:34 '65.

1. Nachal'nik rel'sosvarochnogo poyezda, stantsiya Syzran',
Kuybyshevskoy dorogi. (MIRA 18:5)

LUKANIN, Ye.A., polkovnik; CHEREDNICHENKO, V.T., polkovnik; LESNEVSKIY, S.A.,
polkovnik; KOLOTOV, V.I., kapitan 1 ranga; KORKOSEKIN, A.P., polkovnik;
POROFONOV, I.F., podpolkovnik; ROZANOV, I.S., podpolkovnik; LISHEKOV,
M.M., podpolkovnik; SAPRONOV, A.T., mayor; BULASHCHERKO, T.K., mayor;
SKAPENKOVA, T.N.; SOROKINA, L.D.; ZOTOV, M.M., polkovnik, red.;
MYASNIKOVA, T.F., tekhn.red.

[Material for political studies; a manual for group leaders]
Materialy k politicheskim zaniatiiam v pomoshch' rukovoditeliam
grupp. Moskva, Voen.izd-vo M-va obor. SSSR, 1958. 199 p. (MIRA 11:5)

1. Russia (1923- U.S.S.R.) Armiya. Upravleniye propagandy i
agitatsii. 2. Vojennyy otdel Gosudarstvennoy biblioteki imeni
V.I.Lenina (for Skapenkova, Sorokina)

(Russia--Army--Education, Nonmilitary)

NEGODA, Grigoriy Pudovich, kontr-admiral; ZOTOV, M.M., red.; SOLOMONIK,
R.L., tekhn. red.

"Besposhchednyi." Moskva, Voen. izd-vo M-va obor. SSSR, 1961. 108 p.
(MIRA 14:11)
(World War, 1939-1945--Naval operations)

ZOTOV, M.M., polkovnik, red.; MYASNIKOVA, T.P., tekhn. red.

[Winged youth; accounts and reminiscences] Krylataja junost';
ocherki i vospominaniia. Moskva, Voen. Izd-vo M-va obor. SSSR,
1958. 142 p. (MIRA 11: 11)

(Russia--Air force)

EQUATIONS AND OPERATORS IN \mathcal{M}_2

10

30

Physicochemical factors in the formation of bubbles on

bicycle tires. *M. Zolotov, J. Rubber Ind. (U. S. S. R.)* 10, 421-8 (1934).—An extensive study was made to determine the causes of the appearance of bubbles on the surface of rubber tires during vulcanization. It is believed that excess of volatile matter in rubber introduced with resin softeners and in the mix, used for rubberizing the thread, the application of benzene (especially when it is contaminated with benzene) for rubbing the tire thread before pressing, and sudden pressure drops during vulcanization are the chief factors in bubble formation. Contrary to other investigators, excessive moisture and the presence of carbonates in rubber did not promote bubble formation. James Seward

Editor-in-Chief
James Sirel

ASM-SEA METALLURGICAL LITERATURE CLASSIFICATION

"APPROVED FOR RELEASE: Thursday, September 26, 2002

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CIA-RDP86-00513R002065510004-8"

ZOTOV, M.A.

**Cutting tools from scrap metal. Sel'khozmashina no.5:3 of cover My '54,
(MLRA 7:5)
(Cutting tools)**

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510004-8

AUTOV, Mikhail Nikolayevich; YEFREMOVICH, Boris Arsent'yevich;
YERSHOV, Mikhail Vasil'yevich; HRONFIN, M.S., inzh.,
retsenzent; KLOCHKOV, V.I., inzh., retsenzent; KOROTKOV,
V.N., inzh., red.; KHITROVA, N.A., tekhn. red.

[Working principle and operation of automatic battery-powered loaders] Ustroistvo i ekspluatatsiya akkumuliatornykh
avtopogruzchikov. Moskva, Vses. izdatel'sko-poligr. ob"edinienie M-va putei soobshcheniia, 1962. 77 p. (MIRA 15:4)
(Loading and unloading--Equipment and supplies)

"APPROVED FOR RELEASE: Thursday, September 26, 2002
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CIA-RDP86-00513R002065510004-8
CIA-RDP86-00513R002065510004-8"

ZOTOV, M. Ya.; BOLDOVKIN, I. A.

Device for making grooves in gypsum walls. Rats. 1 izobr. preal. v
stroi. no. 104:29-30 '55. (MLRA 8:11)
(Electric conduits)

GULYAYEV, B. B., (Prof., Dr. Tech. Sci.) POSTNOV, L. M. (ENgr.) ZOTOV, M. V. (ENgr.)

"Shrinkage Porosity and Means of Dealing with It."

in book - Improving the Quality of Steel Castings; Transaction of the All-Union ^{in Russian} Conference, Moscow, Mashgiz, 1958. 214 p.

Abstract: Various types of porosity are discussed, methods of detecting them are explained, and measures for preventing porosity are described.

Some measures involve changes in design, while others are accomplished by improved techniques.

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CIA-RDP86-00513R002065510004-8
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ZOTOV, N., polkovnik.

Characteristics of piloting jet planes. Kryl. rod. 8 no. 5:9-10 My '57.
(Jet planes--Piloting) (MIRA 10:6)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510004-8
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510004-8"

ZOTOV, N., inzhener.

Experimental tug pushing on reservoirs. Rech.transp. 14 [1.e. 15]
no. 3:20-21 Mr '56. (MLRA 9:8)
(Towing) (Tugboats)

APPROVED FOR RELEASE: Thursday, September 26, 2002 GIA-RDP86-0513R002065510004-8
APPROVED FOR RELEASE: Thursday, September 26, 2002 GIA-RDP86-0513R002065510004-8

Comparative characteristics of the methods for determination of the degree of cooking of cellulose. N. Zorov. *Bumazhnaya Prom. (Paper Ind.)* 10, No. 9, 312 (1931). (See Review, cf. C. A. 26, 505. -Polemical.)

ASH-SEA METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED 1968 JUN 10
FBI - BOSTON

131 AND 140 CARRERS
PROCESSING AND PREPARATION SHEET

Control of chlorine consumption in bleaching cellulose. N. Zaykov, B. Milov
AND N. Tuzanova. *Bumazhnyj Prom.* 10, No. 7, 14 (1931). It is recommended
that the degree of toughness (ligula content) of cellulose should be detd. by the Sieber
method for the control of active Cl consumption in the bleaching of pulp, and by the
ultramicroscopic method for the pulp used in production in unbleached state. G. B.

131-140 METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR: Zotov, N. (Colonel)

ORG: none

TITLE: Aboard a fighter in the night sky

SOURCE: Aviatsiya i kosmonavtika, no. 1, 1967, 22-26

TOPIC TAGS: night flying, pilot training, all weather flying

ABSTRACT: The increase in night flying requires thorough pilot training on the ground, proper psychological attitude, practical experience, and regular instrument flights. Such errors as misjudgment of distances, premature loss of altitude, undershooting the runway, and sharp braking during the landing run are made by inexperienced pilots and can be avoided by training in instrument flying during bad weather and at night. The ability to shift from visual to instrument flight and back again is sometimes necessary. Interceptor pilots in particular need good training in instrument flying. Reference is made to several outstanding pilots and to their activities. Orig. art. has: 2 photographs.

SUB CODE: 01/ SUBM DATE: none

Card 1/1

GORBACHEV, S.V.; ZOTOV, N.A.

Electrodeposition of copper from solutions of its chloride complexes
in CH_3OH . Zhur. fiz. khim. 38 no.10:2499-2501 0 '64.

1. Khimiko-tehnologicheskiy institut imeni D.I. Mendeleyeva. (MIRA 18:2)

ZOTOV, N.A.; GORBACHEV, S.V.

Electrodeposition of copper from its chloride solutions in acetic acid and pyridine. Zhur. fiz. khim. 38 no.10:2501-2503 O '64.

1. Khimiko-tehnologicheskiy institut imeni D.I. Mendeleyeva. (MIRA 18:2)

"APPROVED FOR RELEASE: Thursday, September 26, 2002

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"APPROVED FOR RELEASE: Thursday, September 26, 2002

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AKTOV, N.N.; GORBACHEV, S.V.

Electrodeposition of copper from solutions of its chloride
complexes in n-C₇H₁₆Oll. Zhur. fiz. khim. 38 no.9/2302-2304
S '64.

(MIRA 17:12)

1. Khimiko-tehnologicheskiy Institut imeni Mendeleyeva.

GORBACHEV, S.V.; ZOTOV, N.A.

Kinetics of the electoreduction of cupric chloride in non-aqueous solvents. Zhur. fiz. kim. 37 no.4:924-927 Ap '63.

1. Khimiko-tehnologicheskiy institut imeni D.I. Mendeleyeva.

ZOTOV, N.A.; GORBACHEV, S.V.

Effect of temperature on the rate of cathodic reduction of copper di-chloride in various solvents. 4hur.fiz.khim. 37 no.7:1606-1609 J1
'63.
(MIRA 17:2)

1. Moskovskiy khimiko-tehnologicheskiy institut imeni Mendeleyeva.

GORBACHEV, S.V.; ZOTOV, N.A.

Effect of complex formation on the kinetics of electroreduction
of copper dichloride in various solvents. Zhur. fiz. khim. 37
no.6:1391-1393 Je '63. (MIRA 16:7)

1. Moskovskiy khimiko-tehnologicheskiy institut imeni
Mendeleyeva.

(Complex compounds) (Copper chlorides)
(Reduction, Electrolytic)

ZOTOV, N.D.; SOLOMONOV, M.A.

How we increased the output of head scarfs. Tekst. prom. 18 no.2-58
F '58.
(MIRA 13:3)

1.Zaveduyushchiy proizvodstvom Gorodkovskoy tkatsko-otdelochnoy fabriki
(for Zотов). 2. Nachal'nik planovo-proizvodstvennogo otdela Gorodkovskoy
tkatsko-otdelochnoy fabriki (for Solomonov).
(Textile fabrics)

IPPOLITOV, I.K.; ZOTOV, N.D.; SEMENOV, G.A.

Specialization of loom filling. Tekst.prom. 19 no.8:72-73
Ag '59. (MIA 13:1)

1. Glavnnyy inzhener Gorodkovskoy fabriki (for Ippolitov).
2. Zaveduyushchiy tkatskim preizvodstvom Gorodkovskoy fabriki
(for Zотов). 3. Starshiy master Gorodkovskoy fabriki (for
Semenov).

(Looms)

SIDOROV, Pavel Petrovich; KALININ, B.A., retsenzent; ZOTOV, N.M., retsenzent;
BRUNELLER, G.A., red.; BEERLIN, K.Z., red.izd-va; SALAZKOV, N.P.,
tekhn.red.

[Ways of improving labor productivity in ship repairing and ship-
building enterprises] Puti povysheniia proizvoditel'nosti truda v
sudoremontnykh i sudostroitel'nykh predpriatiakh. Moskva, Izd-vo
"Rechnoi transport," 1957. 58 p. (MIRA 11:1)
(Labor productivity) (Shipbuilding)

**ABRIKOSOV, S.V.; ALEKSEYEV, A.P.; ZOTOV, N.M.; KUDRYASHOV, G.F.; LAPOV, N.I.;
LEBEDEV, V.P., inzh.; CHIKHMENEV, Ye.Ye.; MEYEROVICH, Ye.A., inzh.,
rezaenzent; RYBAKOVA, V.I., inzh., red.izd-va; SOKOLOVA, T.F.,
tekhn.red.**

[Gasoline-electric and diesel-electric power units with a capacity
from 0.5 to 400 kilowatts; reference book] Benzoelektricheskie
i dizel'elektricheskie agregaty moshchnost'iu ot 0,5 do 400 kvt;
spravochnik. Pod red. V.P. Lebedeva. Moskva, Gos.nauchno-tekhn.
izd-vo mashinostroit.lit-ry, 1960. 543 p.

(MIRA 14:1)

(Electric power stations)

Headgear

Improving the assortment of kerchiefs. Tekst. prom. 12 No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress
October 1952. UNCLASSIFIED.

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CIA-RDP86-00513R002065510004-8"

ZOTOV, N. P., Cand of Tech Sci -- (diss) "Investigation of the Special
Features of Liquid Media on the Process of Cutting Metals,"
Moscow, 1959, 14 pp (Moscow Institute of Chemical Machine Building)
(KL, 2-60, 113)

ZOTOV

APPROVED FOR RELEASE: Thursday, September 26, 2002

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CIA-RDP86-00513R002065510004-8"

POLTEV, Vladimir Kirillovich; SMOL'NIKOV, Lev Petrovich; ZOZOV,
N.P., redaktor; BURDE, L.V., redaktor; KRAPIVIN, G.B.,
redaktor; KHL'NIK, V.P., redaktor; KOVALENKO, N.I.,
tekhnicheskiy redaktor.

[Reference manual for electricians in metallurgical plants]
Spravochnoe rukovodstvo elektrika metallurgicheskogo zavoda.
Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i
tsvetnoi metallurgii, Sverdlovskoe otd-nie, 1955. 456 p.
(Electric machinery--Maintenance and (MERA 8:12)
Repair) (Metallurgical plants)

PHASE I BOOK EXPLOITATION

SOV/5139

Abrikosov, S. V., A. P. Alekseyev, N. M. Zotov, G. F. Kudryashov,
N. I. Lapov, V. P. Lebedev, and Ye. Ye. Chekmenev

Benzoelektricheskiye i dizel'-elektricheskiye agregaty moshchnost'yu
ot 0.5 do 400 kvt; spravochnik (Gasoline- and Diesel-Engine
Electric Generating Sets, 0.5 to 400 kw Capacity; Handbook)
Moscow, Mashgiz, 1960. 543 p. Errata slip inserted. 7,000
copies printed.

Ed. (Title page): V. P. Lebedev, Engineer; Reviewer: Ye. A.
Meyerovich, Engineer; Ed. of Publishing House: V. I. Rybakova;
Tech. Ed.: T. F. Sokolova; Managing Ed. for Information Litera-
ture: I. M. Monastyrskiy, Engineer.

PURPOSE: This handbook is intended for technical personnel con-
cerned with the design and operation of electric generating sets.

COVERAGE: The handbook contains technical data on gasoline- and
Diesel-engine electric generating sets with a capacity of 0.5
to 400 kw. Prime movers, electric generators, and electrical

Card 1/6

Gasoline- and Diesel-Engine (Cont.)

SOV/5139

equipment, as well as the materials required for the selection and designing of generating sets are discussed. The handbook also gives information on the basic requirements for the operation of the sets and on the automation of their control. No personalities are mentioned. There are 34 references, all Soviet.

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Card 2/6

"APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065510004-8
CIA-RDP86-00513R002065510004-8"

ZOTOV, N. P.

Device for investigating cooling action of fluid media. Stan. 1
instr. 36 no.2:38-39 F '65. (MIRA 16:3)

OLEYNIKOV, Viktor Alekseyevich; ZOTOV, Nikolay Sergeyevich; FATEYEV,
A.V., doktor tekhn. nauk, prof., retsenzent; KOTCHENKO, F.F.,
inzh., nauchnyy red.; BRUSKIN, D.M., ved. red.; SAFRONOVA,
I.M., tekhn. red.

[Automatic control of technological processes in the
petroleum and petrochemical industries]Avtomaticheskoe regu-
lirovaniye tekhnologicheskikh protsessov v neftianoi i nefte-
khimicheskoi promyshlennosti. Leningrad, Gostoptekhizdat,
1962. 321 p. (MIRA 15:11)

(Automatic control)
(Petroleum industry—Equipment and supplies)

FATEYEV, Aleksandr Vasil'yevich, doktor tekhn.nauk, prof.; OLEYNIKOV, Viktor Alekseyevich, kand.tekhn.nauk, dotsent; ZOTOV, Nikolay Sergeyevich, assistant; POLYAKOV, Yuryi Andreyevich, inzh.

System for the stabilization and regulation of the speed of a d.c. motor using a tachometer generator. Izv. vys. ucheb. zav.; elektromekh. 3 no.12:58-64 '60. (MIRA 14:5)

1. Zaveduyushchiy kafedroy avtomatiki i telemekhaniki Leningradskogo elektrotekhnicheskogo instituta (for Fateyev). 2. Leningradskiy elektrotekhnicheskiy institut (for Oleynikov). 3. Kafedra avtomatiki i telemekhaniki Leningradskogo elektrotekhnicheskogo instituta (for Zotov, Polyakov).

(Electric motors, Direct current)

ZOTOV, N.V., polkovnik, voyenny letchik pervogo klassa

On a landing run. Vest.Vozd.Fl. no.6:32 Je '61. (MIRA 14:8)
(Airplanes--Landing)

ZOTOVA, N.V.; LAGUNOVA, T.S.; NASLEDOV, D.N.

Negative magnetic resistance in n-type indium arsenide at low
temperatures. Fiz. tver. tela 5 no.11:3329-3331 N '63.
(MIRA 16:12)
1. Fiziko-tehnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad.

GAVRILOV, Ye.N., inzh.; GONIK, A.A., kand. tekhn. nauk; DONSKOY, I.P., kand. tekhn. nauk; ZHUKOV, G.A., inzh. (deceased); LAZAREV, M.P., inzh.; NEFEDOV, S.I., inzh.; PETROV, Ya.P., kand. tekhn. nauk; SAVEL'YEV, V.V., kand. tekhn. nauk; FILIMONOV, S.S., inzh.; SHUL'TS, G.F., kand. tekhn. nauk; ZOTOV, N.V., inzh., retsenzent; ORLOV, N.N., inzh., otv. red.; KOZLOV, A.D., red.izd-va; AKOPOVA, V.M., tekhn. red.

[Water transportation of lumber] Vodnyi transport lesa;
spravochnik. Moskva, Goslesbumizdat, 1963. 560 p.
(MIRA 16:11)

(Lumber--Transportation)

SKVORTSOV, G.G., starshiy nauchnyy sotr.; ROMANOVSKAYA, L.I.,
mladshiy nauchnyy sotr.; Prinimal uchastiye ZOTOV, N.V.,
inzh.; RODIONOV, N.V., nauchnyy red.; GRISHINA, T.S., red.
izd-va; BYKOVA, V.V., tekhn. red.

[Engineering geology prognoses of the conditions of the
development of solid mineral deposits; methodological
instructions] Inzhenerno-geologicheskie progonzy usloviil
razrabotki mestorozhdenii tverdykh poleznykh iskopaemykh;
metodicheskie ukazaniia. Moskva, osgeoltekhizdat, 1961. 82 p.
(MIRA 15:7)

(Engineering geology)
(Mines and mineral resources)

ZOTOV, O. F.

USSR / Microbiology. Antibiosis and Symbiosis.
Antibiotics.

F-2

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 33771

Author : Zotov, O. F.

Inst : Not given

Title : A Study of Antibacterial Properties of Dnepr Fish.

Orig Pub : Nauk. zap. Kievsk. un-t, 1956, 15, No 12, 141-149.

Abstract : No abstract.

Card 1/1

AB, Sh.L., inzh.; ZOTOV, P.I., inzh.

F.P.Il'in, an efficiency expert. Energetik 11 no.1:33-34 Ja
'63. (MIRA 16:1)

(Electric power plants)
(Electric power distribution)

ZOTOV, P.I., inzh.

Mechanization of operations in the reclamation of spent oils.
Energetik 10 no.7:15-16 J1 '62.
(Oil reclamation) (MIRA 15:7)

KOLIN, K.T., kand.tekhn.nauk; LISOGURSKIY, V.I., inzh.; ZOTOV, P.I.,
inzh.

Closed-circuit television system for the centralized control
of the operation of boilers. Elek. sta. 31 no.8:15-24
Ag '60. (Boilers) (Industrial television) (MIRA 14:9)

ZOTOV, P.I., inzh.; LOKSHIN, A.M.

Maintaining open water above hydroelectric power station structures
and sluices by means of a machine for generating water currents.
Elek. sta. 31 no.12:44-47 D '60. (MIRA 14:5)
(Hydroelectric power stations)

ZOTOV, P.I.

Dispatching television unit for electric power stations. Biul.tekh.-
ekon.inform. no.11:45-48 '59. (MIRA 13:4)
(Industrial television)

TVER'YE, M.M.; ZOTOV, P.I.

Electrician innovator, S.F.Pinaev. Energetik 8 no.1:34
(MIRA 13:5)
Ja '60. (Electricians)

ZOTOV, P.I.

AID P - 726

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 19/26

Authors : Kazantsev, M. S., Eng. and Zotov, P. I., Eng.

Title : A simple method of shifting a generator to operate as
a synchronous condensor.

Periodical : Energetik, 9, 25-28, S 1954

Abstract : The above shifting is often necessitated by the lack of
reactive power in power systems. The authors describe a
simple method of alteration of both parts of the turbine-
generator coupling, which was applied to two 10,000-kw
turbogenerators. 5 diagrams.

Institution : None

Submitted : No date

ZOTOV, P. I.

KAZANTSEV, M.S., inzhener; ZOTOV, P.I., inzhener.

Simple method of switching a generator to synchronous compensator
operation. Energetik 2 no.9:25-28 S '54. (MLRA 7:9)
(Dynamos)

REF ID: A6262

ZOTOV, P. I., Eng.

Power Engineering

Personal Stakhanov plans for economizing fuel and electric power. Rab. energ., 2,
No. 9, 1952.

Monthly List of Russian Accessions, Library of Congress
December 1952. UNCLASSIFIED.

1. ZOTOV, P. I., Eng.
2. USSR (600)
4. Electric Power Plants
7. Thirtieth anniversary of the electric power station "Krasnyi Oktiabr'", Elek. sta., 23, No. 11, 1952.

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Suspension supports for the locators on the MRD52 defectoscope.
(MIRA 18:10)
Put' i put, khoz. 9 no.7:21 '65.

1. Stantsiya Yegorshino, Sverdlovskoy dorogi.

ZOTOV P. P.

Zotov P. P., "Automatic Control of Ventilating Installations," *Tekstil'naya Promyshlennost' [Textile Industry]*, 1953, No 5, Pages 32-36, 5 illustrations.

CHERKINSKIY, Boris Mendeleyevich; TOKAREV, Dmitriy Georgiyevich;
MAREYEVA, Anna Gerasimovna; ZOTOV, Petr Petrovich;
GORODOV, K.I., retsenzent; SOROKINA, Ye.V., retsenzent;
MOTORIN, I.V., retsenzent; KHALFIM, V.N., retsenzent;
SHTEYNGART, M.D., red.; FYATNITSKIY, V.N., tekhn. red.

[Handbook for the power engineer in the textile industry]
Spravochnik energetika tekstil'noi promyshlennosti. [By]
B.M.Cherkinskii i dr. Moskva, Gizlegprom. Vol.2. [Heat
engineering] Teplotekhnika. 1963. 615 p. (MIRA 17:2)

ZOTOV, P.P.

20-6-29/48

AUTHOR:

Zotov, P.P.

TITLE:

On the Succession of Intrusion and the Age of Intrusive Rocks
of the Kounrad District (O posledovatel'nosti vnedrenija i voz-
raste intruzivnykh porod Kounrad'skogo rayona)

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 115, Nr 6, pp. 1157 - 1160 (USSR)

ABSTRACT:

These rocks are highly developed here and occupy about 74 % of the district. According to their composition, structure and shape of bodies they are rather manifold and give a very complicated total view to the district. Beside widely spread intrusions of quartz diorites (and granodiorites), biotite-granites and amphibole-like granites, there is a great deal of manifold venous rock whose total length surpasses 1000 km. The study of the intrusive geology of this district is very valuable for an understanding of the entire palaeozoic magnetism, as this district, without exaggeration, according to intensity and perfection represents one of the classical regions of Kazakhstan. During the last 15 years many scientists uttered 2 standpoints on the succession of intrusions, based on the study of this district:

a) The earliest researchers were of the opinion that a single gigantic Bektau-Ata ("Bektau-Atinskij") batholith exists in the

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20-6-29/48

On the Succession of Intrusion and the Age of Intrusive Rocks of the Kounrad
, District

tion is neither to be observed between the venous rocks and quartz diorites, nor between the other rocks and granites. The intrusion of venous rocks took place at a time when the chief intrusions were already sufficiently crystallized and cooled. The position of the Kounrad intrusive complex with regard to its age still gives rise to discussions. The facts accumulated during the last years only approve of the standpoint that its age has to be considered early-Warissian. It was recently found that the effusive of the Kounrad district is not Devonian, as once assumed, but Middle-Carboniferous. The end of the intrusive processes apparently took place in the Permian, although reliable data on this are absent. The intrusions of biotite-, aplite-like granites and granite-porphries thus are Permian (Late Warissian). This is more and more verified by the most recent data. There are 1 table and 2 Slavic references.

ASSOCIATION: Kazakh State University imeni S.M.Kirov (Kazakhskiy gosudarstvennyy universitet imeni S.M.Kirova)
PRESENTED: by D.S. Korzhinskiy, Academician, March 25, 1957
SUBMITTED: November 1, 1956
AVAILABLE: Library of Congress
Card 3/3

69062

S/026/60/000/03/041/047
D001/D006

~~3.90~~ 3.9000

AUTHOR: Zotov, P. P., Candidate of Geological and Mineralogical Sciences

TITLE: Do Gravitational Forces Heat the Earth?
Page 122-124 (USSR)

PERIODICAL: Priroda, 1960, N 5, II

ABSTRACT: The author discusses the role of gravitational forces in creating terrestrial heat and tectogenesis. Dealing with axial revolution, he points out that it must create particle friction evoking an equivalent quantity of heat. On the supposition that the earth revolved more rapidly in its prehistoric past, the braking forces exerted during slow-down would also serve to accumulate heat within the planet itself. The author calculates that while the period of revolution increased from 4 to 24 hours and the moon moved from 2,000 to

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D001/D006

Do Gravitational Forces Heat the Earth?

384,000 km away from earth the earth energy of revolution fell from $107.2 \cdot 10^{36}$ erg to $3.0 \cdot 10^{36}$ erg, $13.5 \cdot 10^{36}$ erg were absorbed by the earth-moon process and $9.1 \cdot 10^{37}$ erg ($2.17 \cdot 10^{30}$ cal) went to heat the earth. Using data derived from G.V. Voytkevich, Kivel, Evans and Goodman, Jeffries, Davis and S.I. Danilevich, he estimates that the earth gives off $3.0 \cdot 10^{20}$ cal of radiogenous heat per annum. The author also maintains that gravitational forces have a considerable influence on the movements of the earth's crust. Ye.N. Lyustikh, Candidate of Physical and Mathematical Sciences, comments that Zotov's hypothesis has been given an inadequate scientific basis. Further flaws and shortcomings are pointed out by Professor V.A. Magnitskiy. Zotov's thesis has less

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69062

S/026/60/000/03/041/047
D001/D006

Do Gravitational Forces Heat the Earth?

originality than the author claims. It has been dealt with before and was recently treated by Ye.N. Lyustikh on the basis of Academician O.Yu. Shmidt's hypothesis. Magnitskiy's attitude is not entirely critical and he finds much to approve in Zotov's conclusions. There are 8 references, 3 of which are English and 5 Soviet. 4

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet imeni
S.M. Kirova (Kazakh State University imeni
S.M. Kirov)

Card 3/3

ZOTOV, P.P.

Organization of a completely mechanized dust and waste removal
in textile factories. Inv. vys. ucheb. zav.; tekhn. tekst. prom.
no.2:131-137 '65. (MIRA 18:5)

1. Moskovskiy tekstil'nyy institut.

SELIVERSTOV, Aleksandr Nikolayevich; RATTTEL', K.N., retsenzent; ZOTOV, P.P.
kandidat tekhnicheskikh nauk, redaktor; GUSEVA, Ye.M., redaktor;
MEDVEDEV, L.Ya., tekhnicheskiy redaktor

[Effect of the dynamic condition of the air medium on the ventilation
of cotton spinning and weaving mills] Vliyanie dinamicheskogo sostoia-
nia vozduzhnoi sredy na ventilatsii priadil'nykh i tkatskikh
khlopchatobumazhnykh fabrik. Pod red. P.P. Zotova. Moskva, Gos. nauchno-
tekhn. izd-vo Ministerstva promyshlennnykh tovarov shirokogo potreble-
nia SSSR, 1954. 94 p.
(Textile factories--Ventilation)

ZOTOV, P.P.

Succession of intrusion and the age of intrusive rocks of the
Kounrad region. Dokl. AN SSSR 115 no.6:1157-1160 Ag '57. (MIRA 11:1)

1. Kazakhskiy gosudarstvennyy universitet im. S.M. Kirova. Predstav-
leno akademikom D.S. Korzhinskim.
(Kounrad District--Rocks, Igneous)

ZOTOV P.P.; SANTSEVICH, M.I.

Means of telephone and telegraph communications should be under the
same administration. Vest. sviazi 21 no.3:23-24 Mr '61. (MIRA 14:6)

1. Starshiye kontrolery komissii Sovetskogo kontrolya Soveta
Ministrov RSFSR.
(Telecommunication)

ZOTOV, PETR PETROVICH

CHERKINSKIY, Boris Mendeleyevich; TOKAREV, Dmitriy Georgiyevich; SHAPKIN,
Il'ya Fedorovich; ZOTOV, Petr Petrovich; SIMKIN, M.Ye., redaktor;
PLEMYANNIKOV, M.N., redaktor; BAKASTOV, V.N., retsenzent; BRAZHKIN,
M.I., retsenzent; MOTORIN, I.V., retsenzent; RATTTEL', K.N., retsenzent;
SHVYREV, S.S., retsenzent; NEKRASOVA, O.I., tekhnicheskiy redaktor

[Manual of power engineering for the textile industry] Spravochnik
energetika tekstil'noi promyshlennosti. Moskva, Gos. nauchno-tekhn.
izd-vo Ministerstva tekstil'noi promysh. SSSR. Vol. 2. [Thermotechnics]
Teplotekhnika. Pod red. M.E. Simkina. 1955. 510 p. (MIRA 9:2)
(Thermodynamics)

GUS'KOV, V.V.; A.GOV, S.A.

Introducing an automatic unit for the distribution of mold sand.
Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.-tekhn.inform.
(MIRA 18:6)
18 no.5:20-22 My '65.

LEONT'YEV, M.N.; prinimali uchastiye: BAKINA, K.V.; KISELEVA, O.M.; KRAVETS, Ye.A.; KARLOVA, S.A.; DUBNOVA, S.S.; SEMENYAKO, A.G.; ZAMORINA, Z.T.; MILANINA, Ye.F.; KOZEL'SKAYA, O.P.; VASIL'KOVA, Z.I.; ZOTOV, S.N.; YERMOLOV, A.I.; BEZLYUDNAYA, V.V.; NAZAROV, B.A.; ASHIKHEMINA, V.M.; ASYAKINA, A.N.; TROITSKAYA, B.I.; SKVORTSOV, A.V., red.; LESHAKOV, I.T., tekhn. red.

[The economy of Orlov Province; a statistical manual] Narodnoe khoziaistvo Orlovskoi oblasti; statisticheskii sbornik. Orel, Gosstatizdat, 1960. 281 p. (MIRA 14:5)

1. Orel(Province) Statisticheskoye upravleniye. 2. Zamestitel' nachal'nika statisticheskogo upravleniya Orlovskoy oblasti (for Leont'yev). 3. Statisticheskoye upravleniye Orlovskoy oblasti (for all except Leshakov) 4. Nachal'nik statisticheskogo upravleniya Orlovskoy oblasti (for Skvortsov)
(Orlov Province--Statistics)

ZOTOV, S.V.

Rod bolting theory. Izv.vys.ucheb.zav.; gor.shur. no.7:9-13 '58.
(MIRA 12:3)

1. Sverdlovskiy gornyy institut.
(Mine roof bolting)

USSR/Physics - Magnetism, Coercivity 1 Oct 50
Alloys

"Dependence of the Coercive Force of Powders of High-Coercivity Alloys Upon the Dimensions of the Particles," T. D. Zотов, Ya. S. Шур, Inst Phys of Metals, Ural Affiliate, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXIV, No 4, pp 687, 688

Coercive force (H_c , 100-650 oersteds) vs particle diam (d, 0.700 microns) for various temp (T, 675-750°) of Al-Ni alloy (14% Al, 25% Ni; remainder Fe). Submitted 7 Jul 50 by Acad I. P. Hardin.

172T83

USER/Metals - Alnifer, Magnetic Properties

21 Nov 51

"On Relationship Between the Coercive Force and
Particle Size of the Powders of Soft Magnetic Ma-
terials," Ya. S. Shur, T. D. Zotov, I. A. Chebo-
tarov, Inst of the Phys of Metals, Ural Affiliate,
Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LIK1, No 3, pp 387-389

Powders of alnifer (9.4% Si, 5.2% Al, balance Fe)
were used to study dependence of coercive force
on size of powder grains and effect of stresses
and temp on this relationship. Coercive force was
measured on specimens of 2 types: those receiving
214503
high cold hardening during crushing and those an-
nealed from 1,000° in high vacum. Results are
graphically represented and discussed. Submitted
by Acad A. F. Ioffe 21 Nov 51.

214563

235T100

USSR/Physics - Gol'dgamer-Thomson
Effect

Sep 52

Transformer Steel

"Change in the Electric Resistance of Monocrystals
of Transformer Steel in a Magnetic Field," T. D.
Zotov, Ya. S. Shur, Inst of Phys of Metals, Ural
Affiliate, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 56, No 2, pp 267-270

Gol'dgamer found that the elec resistance of a
ferrimagnetic increased in a longitudinal magnetic
field and decreased in a transverse field. It
was found recently that resistance of some ferro-
magnetics decreases in both types of fields.
235T100

Describes exptl study of this effect in monocrystals
of transformer steel (3.5% Si). Sub-
mitted by Acad I. P. Bardin 16 Jul 52.

235T100

PHASE I BOOK EXPLOITATION SOV/3544

Akademiya nauk SSSR. Otdeleniye fiziko-matematicheskikh nauk

Fizika tverdogo tela; sbornik statey, II (Solid State Physics; Collection of Articles, II) Moscow, Izd-vo AN SSR, 1959. 328 p. 3,500 copies printed.

Ed.: A.F. Ioffe, Academician; Ed. of Publishing House: V. N. Filipovich; Tech. Ed.: R.A. Zamarayeva.

PURPOSE: This collection of articles is intended for physicists investigating the structures and properties of solids.

COVERAGE: This volume II of a two-volume collection of articles dealing with problems of solid state physics, was prepared by the Department of Physics and Mathematics, Academy of Sciences, USSR. The authors report on the physical properties of semiconductors such as germanium, cadmium sulfide, cadmium selenide, gallium arsenide, silicon, and various metal alloys. The electrical conductivity of these substances is studied. The effects of irradiation and acoustic phonons on semiconductors are also investigated. Several articles are

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Solid State Physics

SOV/3544

Kolomiyets, B.T., and A.A. Mal'kova. Property and Structure of Ternary Semiconducting Systems

32

Lashkarev, V.E., R.N. Bondarenko, V.N. Dobrovolskiy, G.P. Zubrin, V.G. Litovchenko, and V.I. Strikha. Electrical and Recombinational Properties of Germanium Doped With Beryllium

39

Ignatkov, V.D., and V.Ye. Kosenko. Solubility of Silver and Iron in Germanium Alloyed With Antimony and Phosphorus

47

Kolomiyets, B.T., I.T. Sheftel' Ye. V. Kurlina, and G.N. Tekster-Proskuryakova. Electric Properties of Cobalt-Nickel Oxide Semiconductors

50

Yurkov, B.Ya. Path-Energy Relation for Lattice Atoms of a Silicon Crystal Knocked into the Interstices by Electron Irradiation

63

Mashovets, T.V., and S.M. Ryvkin. Temperature Dependence of Lifetime in Germanium in the Intrinsic Conductivity Region

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Alferov, Zh. I., G. V. Gordayev, and V. I. Stafeyev. Temperature Dependence of Breakdown Voltage in Germanium and Silicon Diodes	104
Vertsner, V.N., Yu. V. Vorob'yev, and L.N. Malakhov. Application of the Shadow Electron-Optic Method to the Investigation of p-n Junctions	109

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Solid State Physics

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Lang, I.G. Role of Double-Phononic Processes in the Scattering of Electrons in Ionic Crystals	186
Grimberg, A.A. Temperature Dependence of the Lifetime of Non-equilibrium Current Carriers in Semiconductors During Recombination of Multicharged Centers	192
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Chuyenkov, V.A. Theory of Electrical Breakdown Semiconductors (p-n Junctions). Part II	209
Ostroykhov, A.A., and K.B. Tolpygo. Theory of Unsteady Emission of a Semiconducting Thermocathode. Part I. Linear Approximation	215
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80V/3544

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Pines, B. Ya., E.F. Chaykovskiy, and N.V. Kaluzhinova. Dislocation and Diffusion Effects During Recrystallization of Deformed Copper	264
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"APPROVED FOR RELEASE: Thursday, September 26, 2002
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CIA-RDP86-00513R002065510004-8
CIA-RDP86-00513R002065510004-8"

Solid State Physics

SOV/3544

Gordonov, A.Yu. Transients in a Transistor With a Common Emitter

319

AVAILABLE: Library of Congress

Card 9/9

TM/gmp
6/1/60

SOV/126-7-6-17/24

AUTHOR: Zotov, T. D.

TITLE: Temperature Dependence of the Electric Resistance of a Magnetite Single Crystal, Cooled in a Magnetic Field Below its Low-Temperature Transformation

PERIODICAL: Fizika metallov i metallovedeniya, 1959, Vol 7, Nr 6,
pp 906-909 (USSR)

ABSTRACT: The object of this investigation was to study the temperature-dependence of magnetite cooled below 111°K in a magnetic field and the effect of the field strength in which cooling was carried out on the electrical resistance. A natural magnetite single crystal from the Kosoy-Brod [Urals] deposit was used, its main impurity being 0.1-0.3% titanium. No static distortion of the crystal lattice could be detected. From the crystal two specimens in the form of 1.3 mm diameter rods 7 and 6 mm long were cut with their axes along the [100] direction. The data from the two specimens, agreed well: only those for the longer one are given. The ratio of resistance of the specimen cooled in a magnetic field to that when cooling was effected without a field is shown as a function of field strength in Figs 1 and 2 for longitudinally and

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SOV/126-7-6-17/24

Temperature Dependence of the Electric Resistance of a Magnetite Single Crystal, Cooled in a Magnetic Field Below its Low-Temperature Transformation

transversely applied fields, respectively. Temperature was measured to $\pm 0.3^{\circ}\text{K}$ with a copper-constantan thermocouple, and resistance to ± 0.00005 ohm. Resistance was measured at the lowest temperature with no field applied. For studying the temperature dependence of the resistance (shown in Fig 3 as functions of 1000/absolute temperature or cooling in longitudinal and transverse fields and without a field) the specimen was demagnetized and the resistance determined while its temperature was rising at $3-8^{\circ}\text{C}$ per hour from 63.5°K to room temperature. Considerable anisotropy of resistance was found, but only below the transformation temperature. A great 14.5-21.5-fold change in resistance occurs in the range $111.0-112.3^{\circ}\text{K}$. The ratio of resistance for cooling in a transverse field to that in a longitudinal field shows a maximum of 93°K when plotted against 1000/absolute temperature (Fig 4), which the author attributes tentatively to a further transformation.

N. V. Volkenshteyn showed interest in this work and
Card 2/3 B. S. Borisov carried out the X-ray investigation of

Temperature Dependence of the Electric Resistance of a Magnetite
Single Crystal, Cooled in a Magnetic Field Below its Low-Temperature
Transformation

SOV/126-7-6-17/24

specimens.

There are 4 figures and 11 English references.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metal
Physics, Ac.Sc. USSR)

SUBMITTED: October 31, 1958

Card 3/3

67698

18.7100

AUTHOR:

Zotov, T.D.

SOV/126-8-4-22/22

TITLE:

Change in the Electrical Resistance¹ of a Magnetite
Monocrystal in a Magnetic Field near the Region of its
Low-temperature Transformation

PERIODICAL: Fizika metallov i metallovedeniye, Vol 8, Nr 4, 1959,
pp 639-640 (USSR)

ABSTRACT: It is well known that below 111°K, the physical properties of magnetite are rapidly altered (Refs 1-5). The change in the physical properties is usually associated with a low-temperature transformation in the magnetite. The present author has measured the temperature dependence of the electrical resistivity in a longitudinal magnetic field between 78° and 213°K using a natural monocrystal of magnetite. The specimen was in the form of a rod 7 mm in length and 1.33 mm in diameter. The axis of the rod was in the direction of the crystallographic axis. Electrical measurements and chemical analysis have shown that the monocrystal was close to the stoichiometric composition. Spectral analysis showed that the main impurity was titanium (0.01-0.03%). In addition traces of Al, Cu, Cr, Mg and H

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1/3

6769B

SOV/126-8-4-22/22

Change in the Electrical Resistance of a Magnetite Monocrystal in
a Magnetic Field near the Region of its Low-temperature
Transformation

certain other elements have also been found. X-ray analysis did not establish any static distortion of the lattice. The electrical conductivity was measured using a slow heating of the specimen from the liquid nitrogen temperature. It was placed in a longitudinal magnetic field of 20,000 oersted which is considerably greater than the field necessary to saturate the specimen. The specimen was cooled down to liquid nitrogen temperature in the absence of a magnetic field. In the figure, the continuous curve represents the relative change in the resistance of the rod when placed in the longitudinal magnetic field as a function of temperature. The dashed curve shows the temperature dependence of the resistivity. Both curves were obtained with the same specimen. As can be seen, the first of these two curves has two minima and passes through zero at 88 and 140 °K. The first minimum is due to a transition, on heating, from an ordered state *y*

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Change in the Electrical Resistance of a Magnetite Monocrystal in
a Magnetic Field near the Region of its Low-temperature
Transformation

to an unordered state. The second minimum is
apparently due to the interaction of conduction electrons
with fluctuations in the electron density, magnetization
and ordinary density. On switching on the magnetic
field, the fluctuations are reduced and consequently the
mobility of the electrons is increased. This leads to
a reduction in the electrical resistance.

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and advice, and to B.S. Borisov for the X-ray analysis of

the specimen.

There are 1 figure and 7 references, of which 2 are
Soviet and 5 English.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals, Ac.Sc. USSR)

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PHASE I BOOK EXPLOITATION:
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Vsesoyuznoye sovetskoye chislennye po fizike, fiziko-khimicheskim svedeniyam.
Territoriy 1 fizicheskikh ogranichenii ikh priemenniy. 3d. Minsk, 1959

Perityi fizicheskkiye i fiziko-khimicheskkiye svedeniya. Dokladny
(Ferrites). Physical and Photochemical Properties. Reports)

Minsk, Izd-vo Akad. SSSR, 1960. 655 p. Errata slip inserted.
4,000 copies printed.

Sponsoring Agencies: Muchnyy svert po magnetizmu AN SSSR. Otdel
Fiziki tverdogo tela i poluprovodnikov AN SSSR.

Editorial Board: Resp. Ed.: N. M. Strel'tsa, Academician of the
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PURPOSE: This book is intended for physicists, physical chemists,
radio electronics engineers, and technical personnel engaged in
the production and use of ferrimagnetic materials. It may also
be used by students in advanced courses in radio electronics,
physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-
Union Conference on Ferrites held in Minsk, Belorussian SSR.
The reports deal with magnetic transformations, electrical and
galvanomagnetic properties of ferrites, studies of the growth
of ferrite single crystals, problems in the chemical and physi-
cal analysis of ferrites, studies of ferrite systems having
rectangular hysteresis loops and multicomponent ferrite systems
displaying spontaneous rectangularity. Problems in magnetic
attraction, highly coercive ferrites, magnetic spectroscopy,
ferrimagnetic resonance, magneto-optical physical principles of
using ferrite components in electrical circuits, anisotropy of
electrical and magnetic properties, etc. The Committee on Mag-
netism, AS USSR (S. V. Yomarevsky, Chairman) organized the con-
ference. References accompany individual articles.

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Isaevskiy, A. A. and F. G. Evstigneev. The Electrical
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of Some Ferrites. 266

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Resistance. 298

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Method and Properties of Barium Oxide Magnets. 302

Shur, Ya. S. and G. S. Kondorova. The Magnetic Structure
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Slesarenko, B. V. and Ye. P. Kuriatova. Temperature De-
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